The Cary Arboretum

of The New York Botanical Garden

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In This Issue:

Botanists, Administrators and Citizens Discuss Future of Garden
Marist, Arboretum Sign Agreement
Visitors get the Walk-Around
Bean Beetles Show Food Preferences
Statistics on Fishing Program Compiled
At the Garden
People at the Arboretum
Solar Greenhouse Book
Around the Arboretum
Christmas Workshops Open
Ruth Walling will be Missed
Promotions Announced

Botanists, Administrators and Citizens Discuss Future Options for New York Botanical Garden

Twenty-five distinguished botanists and administrators from around the world studied, toured, and discussed the past, present and future of the New York Botanical Garden in a three-day International Working Conference held in the Bronx and Millbrook, October 6 through 8.

The conference, initiated by Dr. James M. Hester who became the President of the New York Botanical Garden September 1st, was sponsored by the Ford Foundation, IBM, and the Mary Flagler Cary Charitable Trust, and brought together a panel of experts and an audience of nearly 150 staff members and guest participants, including members of the press and concerned citizens from neighboring communities, foundations, colleges, universities, and industrial firms.

Dr. René Dubos, Pulitzer Prize-winning author, microbiologist, pathologist, and environmental philosopher, began the three-day program "daydreaming about the Cary Arboretum, its scientific potential and social goals in energy transfer, land management, and environmental concern."

Members of the panel, including experts from museums, arboreta and scientific and educational institutions, responded to Dr. Dubos' introductory comments with recommendations on the future direction of the Cary Arboretum, including research in ethnobotany and continued dendrological studies. According to Dr. J. Patrick Brenan, Director of the Royal Botanic Gardens in Kew, England, "the Arboretum should concentrate on its areas of strength, particularly in education and research with ecological themes." Throughout the conference, the panelists recommended continued integration of education with our academic research programs for projection to the public.

Arboretum Director Dr. Willard Payne describes the Plant Science Building's solar design to visitors during the President's Conference.

Emphasis on solid science, the accumulation of new biological information, especially for the tropics, was prominent throughout. "We must concentrate on the tropics for research," warned Dr. Peter Raven, Director of the Missouri Botanical Garden. "All tropical forests will be disrupted within the next 25 to 30 years, and we know virtually nothing about them. They can be of great use to mankind." The New York Botanical Garden, including the Cary Arboretum, have strong histories of tropical ecosystem research.

Continued study of plant biology and ecology in industrially devastated areas, in areas needing biological conservation, for economic botany application and continued for use in college and university programs, were among the many topics of discussion brought out by the panel. The deliberations were taped, edited and transcribed for evaluation by a writing committee that will compile a report on the conference, its accomplishments, and directions. "What we are seeking," said President Hester, "are options for future development. From these, we will develop policies, and these will help us shape new programs, as well as strengthen existing ones."

(continued on page 3)

Marist College, Cary Arboretum Sign Agreement

An agreement signed October 16 by officials of the Cary Arboretum, the New York Botanical Garden, and Marist College, will serve as the stepping stone towards enhancing educational and research goals of both institutions.

Short-range objectives include the opportunity for Marist staff and students to pursue study and research at the Arboretum and for joint appointments to be made on an adjunct basis for individual staff members who will be working at both institutions. Other objectives include the provision of work/study students to provide assistance with the Arboretum's computer which is currently linked into Marist's computer center in Poughkeepsie.

According to Arboretum Director Dr. Willard Payne, "This formal agreement comes as the next step in a close educational arrangement we have enjoyed with Marist College for several years, and will support staff and students' efforts to work together toward the highest academic end."

The Arboretum has similar working arrangements with SUNY at Syracuse and with CUNY through Lehman College in the Bronx, as well as close working relationships with faculty and students at Vassar, Dutchess Community College, the University of Connecticut at Storrs, and with other academic institutions in the area.

The agreement, signed by New York Botanical Garden President Dr. James Hester, Arboretum Director Dr. Willard Payne, and Marist President Dr. Dennis Murray, sets forward long-range goals to develop educational and research programs of mutual benefit to the institutions.

Visitors Get The Walk-Around at Cary . . . and Like It

Visitors: a group of conservatively dressed youths, followed by a young couple wheeling a baby carriage, enter the quiet lobby – its floors and walls streaked with sunbeams filtering in through the skylights. They are followed by an elderly couple with two young grandchildren who immediately help themselves to the selection of information pamphlets displayed on a table. Two men in business suits – solar architects from New Hampshire – enter the building and begin a whispered conversation as they study the insulated shutters, skylights, and building design. Five minutes pass and a college-aged man walks in, notebook and camera in hand. It is tour day at the Arboretum's solar-heated Plant Science Building.

On this particular day, Mrs. Dorothy "Dottie" Watson, an Arboretum volunteer from Beacon, is in charge of tours in the building, and has arrived long before any of the visitors. As a tourguide, Dottie frequently prepares for her tours by scanning the building and briefly interviewing staff to update herself and her visitors on current Arboretum activities and research.

She cordially greets her tour group, the first of possibly two or three groups she will take through the building during the next two hours. She begins with a brief history of the Arboretum as the visitors stand overlooking a hemlock forest through floor-to-ceiling glass doors. All watch her intently as she explains some features of the building, and, as she begins a walk through one long corridor of the U-shaped structure, the two small children follow *pari passu* with the adults proceeding behind.

She demonstrates the timed lighting fixtures, the rope-operated skylights, and explains the concept of solar hearing. An architect inquires about construction materials and she answers confidently with technical jargon, and later with statistics he needs as comparison data for other buildings he is studying.

The group visits several laboratories, the library, and the mechanical equipment room, where the children can see a thermometer indicating what temperature the solar collectors are in mid-afternoon on this slightly overcast day. Even though it is not quite 40°F outside, the collectors are a surprising 160°F. As a finale, the group is escorted up a circular staircase that reminds the children of the "Starship Enterprise," returning them to the main lobby.

Dottie is one of the people trained by the Arboretum's Education Department to be a volunteer tourguide. Some volunteers come to the Arboretum with strong backgrounds in solar heating and alternative energy, including Jeff Gorman of Millbrook whose background includes formal training and hands-on experience in solar design. Others come to the Arboretum with little experience but with genuine interest in solar design or in the Arboretum in general, and start at "block one" to develop a knowledge of Arboretum activities, programs, and educational goals.

All tourguides share the satisfaction of providing visitors with information about the Arboretum, and excel in relating to all levels of visitors, from eager school children to knowledgeable adults.

Additional guides are needed to conduct tours through the Plant Science Building and the Arboretum's greenhouse on Wednesdays and Sundays, 1:30 to 3:30 p.m. Potential tourguides receive formal instruction through the Arboretum's Educational Department, including written background statistical information which can accompany guides on "dry runs," and during scheduled tours.

Cary volunteers are an essential, integral part of the Arboretum staff. Their dedication and time are priceless resources that support work in all fields, including the library, horticulture, wildlife and research departments, and the education program would be impossible without them.

A tour for the deaf by volunteer Jeff Gorman is supplemented by sign language in the Arboretum's Plant Science Building.

Volunteers are entitled to many staff benefits, including a 10% discount in the Cary Gift and Plant Shop located in the Gifford House, one free course after 20 hours of volunteer time, invitations to the annual Christmas party and picnic, and an annual ceremony where volunteers are presented with certificates and are formally recognized for their service. Senior citizens are also reimbursed for traveling costs.

Good benefits, good people and a wonderful and important cause are all reasons to become an Arboretum volunteer. If interested, please contact volunteer coordinator Dr. Peter Dykeman at the Gifford House Education and Visitor Center on the Sharon Turnpike (Route 44A), telephone (914) 677-5358.

Bean Beetles Show Feeding Preferences in Arboretum Lab

Dr. Clive Jones sets up a feeding test for experimentation with the Mexican Bean Beetle.

The Mexican bean beetle, *Epilachna varivestis,* has been under close scrutiny by Arboretum Chemical Ecologist Dr. Clive Jones since 1979, when he set up the original investigation at the University of Georgia's Department of Entomology. Since then, he has studied the feeding habits of thousands of beetles in hopes of understanding better the interactions between plants and insects.

Why are ants attracted to peonies? Why are bean plants sought out by bean beetles? Why do insects feed on some plants but not others? These are questions that often have a common answer. Chemical messages from the plant tell the insect whether to eat or not to eat.

In the Arboretum's greenhouse, located on Route 82, thousands of Mexican bean beetles live and breed on bean plants in a screened box. The plants contain a number of chemical messages saying "eat me" to the beetles, and in the laboratory these leaves are treated by Dr. Jones with other chemical compounds that deter feeding. Small leaf discs, treated with one of a group of nearly 300 chemical compounds tested to date, are put in individual test cages along with single bean beetles. The test cages are then monitored, with records made of feeding behavior and quantity eaten. This provides definite information on the effectiveness of chemical deterrents against the bean beetle.

"The value of this research," says Dr. Jones, "is to provide basic information as to which chemical substances have the highest deterrent activity, and why they have this activity. The ultimate goal is to utilize the natural defenses of plants to control insect pests. This is likely to be safer and more effective in the long term than our present dependence on pesticides."

Data on the feeding patterns of the Mexican bean beetle are currently being compiled. The first in a series of papers on the test results will be published next year. "These data will pave the way to a greater understanding of interactions between insects and plants, and could eventually lead to the manipulation of these interactions for crop protection," he said.

At the Garden

Chrysanthemums are once again featured in the beautiful Enid A. Haupt Conservatory through December after which thousands of poinsettias will take their place under the graceful arches of the crystal palace in the Bronx.

Through December 19, proceeds from the Wildenstein Galleries' exhibit of works by 17th century French artist Boucher will come to the New York Botanical Garden. The gallery is located on 19 East 64th Street in New York City.

The Garden's annual Christmas plant sale, scheduled for December 13-14, will feature poinsettias, cyclamens, orchids, and a wide variety of other plants offered by the Shop-in-the-Garden located in the Museum Building. Members are invited to a special preview of this sale on December 12 from 5:00 to 8:00 p.m. Refreshments will be available.

Several craft courses, nature walks and lectures will be offered at the Garden during the next few months, including a weekend illustrated lecture on the Phillippines, Baguio and Zamboanga to be presented on December 7 by Eloise and Earl Debble.

For more information on activities in the Bronx, please contact Robin Parow-Place at (914) 677-5343.

Statistics on Fishing Program Being Compiled

Are you generally satisfied with the size of the trout caught in the Arboretum's stream? Would you be in favor of supplemental stocking to maintain fish populations? Should there be a daily limit of fish caught?

These are questions from a recent survey issued to Cary Arboretum staff members, volunteers and friends who are collaborating in a survey to evaluate stream access (primarily fishing), in the east branch of the Wappingers Creek which traverses the Arboretum grounds. The poll, which is part of a research project which began in 1979, is under the direction of Coordinator of Wildlife Resources Jay McAninch, in conjunction with scientists and students at the University of Connecticut.

Prior to the initiation of "Fishing Friends of the Arboretum" in 1979 by James van Alen of Millbrook, there were virtually no scientific statistics available for the east branch of the Wappingers Creek, their inhabitants and potential. Mr. van Alen's enthusiasm and interest in exploring the Arboretum stream spread to fifteen local residents who together set up financial backing for the research programs that would follow.

A fish census was conducted between May and August, 1979 by the "Fishing Friends," along with Arboretum volunteers, students from the Youth Conservation Corps (YCC), and Bill Hyatt, a student at the University of Connecticut. The survey was carried out under the supervision of Dr. Walter Whitworth of the University of Connecticut and revealed that brown trout, which are not native to this area, were the only trout encountered. Of these, twenty-six percent were harvestable size (nine inches or greater). Other fish taken were largemouth bass, bluegills and other panfish, shiners, minnows, and white suckers. During the past summer, size, weight, age and species of fish were determined through a process called electrofishing, a technique which allows researchers to momentarily shock, capture, record data on and release the fish unharmed. Additional data were obtained by stream snorkeling and from fisherman reports.

During the past fishing season, Bill Hyatt continued his research with a survey of the stream for physical, chemical and biological conditions, including measuring oxygen levels, pH balance, and flow of the stream, as well as the stability of the stream for invertebrate and vertebrate species that reside in various aquatic habitats. "We very recently have found that it is a self-contained, thriving stream, and we have a good description of its characteristics," says Mr. McAninch.

The data collected during these programs, along with information being compiled from the recent fisherman's questionnaire, will be analyzed this winter to determine the management options that should be implemented. Possible alternatives range from no management, to extensive manipulation, including stream stocking and protection of breeding areas.

"We have received tremendous cooperation from fisherman, volunteers, and staff members," says Arboretum Director Dr. Willard Payne, "and through this assistance, we will determine the future of the fishing program and the stream. We are also pleased that the work is forming the basis for the master's thesis of Bill Hyatt, a project that strengthens our long-standing collaboration with the University of Connecticut."

People at the Arboretum

AMY HARDING KING, ASSISTANT BUSINESS MANAGER . . . Originally from Nova Scotia, Amy made her first move south when she became a student at the Wells Academy in Kitchener, Ontario. After two years of training in the field of accounting, another move south brought her to Framingham, Massachusetts, near Boston, where her sister acted as an American sponsor and formally introduced her to "life in the States."

She met her husband, Arthur, at a wedding in Framingham, and this led to an additional move south to New Jersey, where they spent their first ten years of married life.

Her appointment to the Cary Arboretum staff April 1, 1980, came after four years as Assistant Manager of Interfaith Towers and Halsey Senior Village in Poughkeepsie, where she worked with her husband who is the Director of Senior Housing there. During that time, she took on the roles of both administrator and counselor, for she knew virtually all of the 300 resident senior citizens, their problems, and needs.

"At the Arboretum," she says, "I was introduced to a new atmosphere, new challenges, and wonderful people. I feel very welcome here."

At home Amy, who is the mother of two boys, Jamie, age 21, and David, 18, enjoys caring for her plant collection, cooking and entertaining. She has served on the Board of Deacons of the First Presbyterian Church in Poughkeepsie, where her husband is an Associate Minister, and has been actively involved in the Planning Division of the United Way, as well as all levels of the P.T.A. Currently, Amy is involved in development of the Grace Smith House, a home for battered women in Poughkeepsie, and has served on the Board of Directors of this home as its first President.

Cross country skiing, walking, and hiking are included in her favorite outdoor sports. The Arboretum, a perfect place to enjoy these sports, has stimulated her appreciation of nature. "I continue to enjoy the beauty of the land every day," she says, "it is always changing, and never dull."

Botanists, Administrators, and Citizens Discuss Future Options

(continued from page 1)

According to Arboretum Director Dr. Willard Payne, "It was a privilege and a great honor to serve as host to administrators from the world's finest botanical gardens, museums, and universities during their recent conference at the New York Botanical Garden. The panel and participants made thoughtful analyses, and presented many suggestions and constructive criticisms to the Garden that will help us shape more valuable and effective courses for the future. It is also heartening to receive new affirmation from such a knowledgeable group of the trend-setting importance of the New York Botanical Garden and the Cary Arboretum among the great botanical and ecological study centers of the world."

Christmas Workshops Open for Registration

Instructions on making table-top Christmas trees, advent wreaths, pinecone wreaths, ivy and kissing balls, and evergreen wreaths will highlight the Arboretum's Christmas season this year as members of Millbrook's Nine Partners Garden Club begin teaching workshops November 22 at the Gifford House Education and Visitor Center on the Sharon Turnpike.

The workshops, which are limited to twenty students each, include all materials to make beautiful Christmas decorations – some of which will provide many years of holiday enjoyment.

Instruction on making an advent wreath will be conducted November 22, 10:00 to 12:30 p.m. Living greens, forms, wire and tape will be supplied.

Learn to make a large pinecone wreath during three sessions beginning December 2. Treasured as gifts, these wreaths will be lasting favorites.

On December 6, learn to make a twelve-inch glued pinecone wreath on a masonite form from 9:30 a.m. to noon, or living ivy balls and kissing balls from 1:30 to 4:30 p.m.

Two workshops on constructing an evergreen wreath will be given on December 13 and December 20, from 9:30 to noon. This popular wreath, made of freshly cut evergreens, can be beautifully embellished in dozens of ways that say "Merry Christmas" and "Welcome" to your holiday visitors.

Instructions on constructing a table-top Christmas tree will be given December 13, 1:30 p.m. to 4:00 p.m. This tree will be made on a permanent hardware cloth base that can be redecorated every year.

For more information on winter courses, activities and registration fees, please call the Gifford House Education and Visitor Center at (914) 677-5358.

Ruth Walling Will be Missed

Mrs. Ruth Walling, a dedicated Arboretum volunteer for several years, died August 26 at Vassar Brothers Hospital.

The greenhouse staff, and all Arboretum personnel who worked with Ruth, will miss her friendly, strong personality.

Text and photographs by
Robin Parow-Place

Promotions Announced

Arboretum Director Dr. Willard Payne announced November 1 the promotion of Owen Vose, formerly Plumber/Electrician to Supervising Maintainer in recognition of his demonstrated expertise and special training to maintain the solar-heated Plant Science Building, as well as other mechanical systems on the Arboretum grounds.

Noel (Jim) Parry, formerly Assistant Pruner/Gardener, has recently been promoted to Assistant Mechanic, a position which requires diversified skills in maintaining Arboretum automotive equipment.

Solar Greenhouse Book Worth the Money

"The Horticultural Management of Solar Greenhouses in the Northeast, is a working, practical manual for greenhouse owners and for those thinking about building their own greenhouses," reports Arboretum Librarian Betsy Calvin. Mrs. Calvin reviews new book accessions regularly and notes that this book, by Miriam Klein, has a balance of technical and non-technical information based on interviews with twenty New England greenhouse owners. It contains ideas on greenhouse architectural design, light, temperature, soils, fertilizers and container types, as well as information on seed spacing, recommended vegetables for indoor growing, and recipes for organic insect repellents – including one for garlic and red pepper spray. It also lists sources of beneficial insects, seed catalogs, and other publications. The publication has many photos and illustrations, and is very reasonably priced at five dollars.

The book is included in the Arboretum's circulating collection and can be borrowed by Friends of the Arboretum. The library, which is located on the first floor of the Arboretum's solar heated Plant Science Building, has several new accessions, including *Success with Small Food Gardens Using Special Intensive Methods, Root Cellaring, Miniature Orchids,* and *The Gallant Grouse.* Other books on subjects ranging from horticulture to botanical art and alternative energy are also available.

Mrs. Calvin invites suggestions for future book purchases. She can be reached at (914) 677-5343, extension 270. Although non-members are not permitted to borrow books, the library is open to the public without restriction. Library hours are Monday through Friday, 8:30 a.m. to noon, and 1:00 to 4:30 p.m. As of December, the library will also be open Thursday evenings between 7:00 and 9:00 p.m.

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of
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